BEFORE

THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

DOCKET NO. 2014-69-S

IN RE: Application of Palmetto Wastewater Reclamation LLC, d/b/a Alpine Utilities and Woodland Utilities for adjustment of rates and charges for, and modification to certain terms and conditions related to the provision of sewer service.	**REBUTTAL TESTIMONY OF GARY E. WALSH**

Q. WOULD YOU PLEASE STATE YOUR FULL NAME AND PRESENT POSITION?

A. My name is Gary E. Walsh. I am retired from the Public Service Commission of South Carolina and am currently employed as a utility regulatory consultant by my own firm, Walsh Consulting Group, LLC.

Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

A. I received a Bachelor of Science degree in Business Administration (Banking and Finance) from the University of South Carolina in 1972. During my thirty one year career at the Public Service Commission of South Carolina I attended numerous seminars, workshops, and educational forums sponsored by the National Association of Regulatory Utility Commissioners.

Q. WOULD YOU PLEASE DESCRIBE YOUR WORK EXPERIENCE?

A. Yes. I began working with the Public Service Commission as an auditor in 1972. In this capacity I was responsible for conducting audits of public utilities under the Commission's jurisdiction. In addition, I presented testimony before the

under the Commission's jurisdiction. In addition, I presented testimony before the Commission in rate cases involving electric, gas, telecommunications, water and wastewater companies. My testimony in these matters related to audit results and rate design issues. In 1987, I was promoted to the position of Assistant Director of the Utilities Division. My responsibilities in this position were supervision of the electric, gas, telecommunications and water and wastewater departments. In July of 1994, I was promoted to the position of Deputy Executive Director. My responsibilities in this position involved the supervision of Commission employees in the Utilities and Transportation departments. In 1998 I was promoted to the position of Executive Director of the Commission. In this position, I reported directly to the Commissioners and had overall supervision of all Commission staff members.

Q. WOULD YOU PLEASE DESCRIBE THE REGULATORY CONSULTING WORK YOU HAVE BEEN DOING SINCE YOU RETIRED FROM THE COMMISSION?

A. Yes. In 2003 I formed the Walsh Consulting Group and began working with jurisdictional utilities on a wide variety of regulatory matters for companies appearing before the Commission. Since 2003 I have been retained to provide consulting services for electric, gas, telecommunications, water, and wastewater companies. This work has consisted of accounting and financial analyses associated with rate relief proceedings and has included rate design analysis.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to respond to the testimony of Alexis F. Warmath on behalf of the two intervenors in this case, Arch Enterprises, LLC, doing business as "McDonalds," and Corley Construction, LLC, doing business as Broad River Carwash and Laundry, regarding the proposed rate design for Palmetto Wastewater Reclamation LLC, doing business as Alpine Utilities or "PWR." The approved PWR rate design for the two intervenors employs a single family equivalency rating system based upon the "Unit Contributory Loading Guidelines" set out in Appendix "A" of DHEC Regulation 61-67. In this proceeding, PWR proposes to modify the approved rate design with respect to the equivalencies for fast food restaurants with drive-thru facilities. By its application, PWR proposes to apply the same rate design to customers served by its Woodland system. These DHEC wastewater maximum flow capacity design guidelines are used in PWR's rate design to determine the distribution of the Company's revenue requirement among the various types of customers it serves. My testimony will address certain of the points raised in Mr. Warmath's testimony regarding the equivalency rating component of the rate design that is proposed for the two intervenors.

Q. WOULD YOU PLEASE DISCUSS YOUR PREVIOUS SPECIFIC KNOWLEDGE OR EXPERIENCE THAT QUALIFIES YOU TO PROVIDE TESTIMONY IN THIS MATTER?

A. Yes. My knowledge and experience in this regard arises out of my employment with the Commission for thirty one years in the field of wastewater utility regulation and my subsequent consulting work on behalf of public utilities – which are by statutory definition in South Carolina investor owned utilities --

providing wastewater services. When I was employed with the Commission, it became necessary for me to become familiar with a variety of rate designs for public utilities providing wastewater services. Among these were flat-rate designs in which all customer classes, typically only residential and commercial, were charged the same flat rate; designs based upon metered water consumption where consumption data was available to the utility without cost; and single family equivalency rating designs based upon the DHEC guidelines such as that currently authorized for Palmetto. Subsequent to my employment with the Commission, it has been necessary for me to remain familiar with sewer utility rate designs, including the single family equivalency design that is currently approved for use by PWR, as part of the consulting work I have done for public utilities providing sewer service.

Q. HOW DID THE UNIT CONTRIBUTORY GUIDELINES IN APPENDIX "A" TO DHEC REGULATION 61-67 COME TO BE USED IN RATE DESIGNS FOR PUBLIC UTILITIES IN SOUTH CAROLINA?

A. As is explained in the direct testimony of PWR witness Marion Sadler, the DHEC wastewater loading guidelines found in Appendix "A" to Regulation 61-67 were originally developed by the South Carolina Pollution Control Authority, a predecessor agency to DHEC, and utilized both biochemical oxygen demand, or "BOD," and wastewater flow as capacity design guidelines for wastewater treatment facilities. As Mr. Sadler's testimony also reflects, DHEC eventually eliminated the use of BOD in these guidelines in favor of wastewater flow loadings.

The first occasion of which I am aware that the Commission had to consider a rate design based upon wastewater treatment plant capacity design loading guidelines was in 1973 when Alpine Utilities, Inc. sought approval of a rate schedule that used an equivalency system that established monthly service charges for commercial customers expressed in monetary amounts for each equivalency factor associated with a given type of commercial customer. These equivalency factors were based upon the BOD loading factors contained in the Pollution Control Authority's published loading design guidelines. By way of example, a loading factor might be the number of seats in a restaurant, the square footage of a building, the number of chairs in a dentist's office, and so forth. Previously, Alpine Utilities, Inc. had only served single family residences and apartments and needed rates established to serve proposed commercial and non-residential customers. The Commission approved this rate design in its Order Number 17,177 issued October 4, 1973, in Docket Number 16,855.

In 1975, the Commission again approved a rate design for Alpine Utilities, Inc. based upon design loading guidelines, this time relying upon the DHEC Water Pollution Control Division Guidelines for Unit Contributory Loadings to Waste Water Treatment Facilities." In addition to approving rates for commercial customers using monetary amounts for the equivalency factors associated with the various types of commercial customers, the Commission also approved a "commercial rate" based upon BOD using a formula which applied to types of commercial customers not specifically identified in the DHEC guidelines. This was done in Commission Order 18,862 issued December 6, 1975 in Docket

Numbers 18,314 and 17,764. In 2008, the Commission approved an increase in Alpine's rates utilizing this same rate design by its Order No. 2008-759 issued November 6, 2008, in Docket No. 2008-190-S.

As the Commission is aware, PWR acquired the Alpine Utilities and Woodland Utilities systems in 2011 and in 2012 the Commission approved a modification to the rate schedule for PWR's customers served by the Alpine wastewater system, whereby rates for commercial customers served by this system were set based upon single family equivalencies derived from the hydraulic wastewater flow guidelines contained in Appendix A to current DHEC regulation 61-67. The effect of this modification was to eliminate the use of BOD to determine commercial customer equivalencies for the Alpine commercial rates. As Mr. Wallace discusses in his rebuttal testimony, the effect of this transition from BOD to hydraulic wastewater flow is also the subject of a report made to the Commission by the Office of Regulatory Staff, or "ORS."

Over the years, the Commission has approved sewer rates using single family equivalency ratings derived from the DHEC wastewater flow design guidelines set out in Appendix A to Regulation 61-67 for a number of wastewater utilities, most of which are larger in comparison to the majority of regulated sewer utilities. Currently, I am aware that there are ten sewer utilities, including PWR, that have rate designs employing single family equivalencies derived from the DHEC wastewater flow loading guidelines.

Q. MR. WALSH, EARLIER IN YOUR TESTIMONY YOU MENTIONED THE COMPANY'S PROPOSAL TO APPLY THIS RATE DESIGN TO

CUSTOMERS SERVED BY ITS WOODLAND SYSTEM AND THE ORS REPORT TO THE COMMISSION REGARDING THE ADOPTION OF THIS RATE DESIGN FOR COMMERCIAL CUSTOMERS SERVED BY PWR'S ALPINE SYSTEM; WHAT IMPACTS DO YOU FORESEE FROM THE USE OF THIS RATE DESIGN FOR THE COMMERCIAL CUSTOMERS SERVED BY THE WOODLAND SYSTEM?

A. I do not foresee any significant impact on these customers arising out of the proposed rate design as there is only one commercial customer served by the Woodland system, which is a school. As noted in Mr. Melcher's rebuttal testimony, this customer would actually experience a rate decrease as a result of the adoption of the proposed rate design for Woodland customers.

Q. WHAT IS YOUR UNDERSTANDING OF THE POSITIONS ADVANCED BY MR. WARMATH REGARDING THE USE OF SINGLE FAMILY EQUIVALENCIES TO DETERMINE COMMERCIAL CUSTOMER MONTHLY CHARGES FOR PWR'S SEWER SERVICE?

A. As I understand it, Mr. Warmath believes that the rate design based upon the number of single family equivalents derived from the DHEC wastewater loading design guidelines attempts to estimate average wastewater flows from the various classes and categories of commercial customers served by PWR. I also understand Mr. Warmath to suggest that a preferred rate design would be to use monthly customer water consumption billed by the City of Columbia alone as a proxy for the amount of, and thus the cost to treat, wastewater generated by PWR's customers -- even though he stops short of recommending a monthly service rate to

be adopted based upon this rate design. I also understand Mr. Warmath to opine that a rate design setting rate equivalencies based upon **estimated wastewater discharge amounts** determined by reference to **annual water consumption figures** to be obtained from the City of Columbia for the various classes and categories of customers served by PWR, should be adopted by the Commission. Should this rate design be adopted, and based upon a residential wastewater discharge of 5,550 gallons per month that is assumed by Mr. Warmath, I further understand him to contend that the result would give rise to substantial decreases in rates for the intervenors while causing a slight increase in the monthly residential rates above the requested rate of $35.50 per single family equivalent, or SFE.

Q. WOULD YOU PLEASE COMMENT ON THE POSITIONS TAKEN AND CONCLUSIONS REACHED BY MR. WARMATH?

A. Yes, I will. However, I would like to preface my comments in this regard by noting that the question of rate design is always within the Commission's discretion. To the extent that the Commission determines that a modification to the number of single family equivalencies attributable to a customer or group of customers in this case is appropriate, PWR's revenue requirement would need to be redistributed among all customers in order for the Company to realize just and reasonable rates. Mr. Warmath recognizes this in his testimony. As evidenced by the Application the Company has filed with the Commission in this matter, the utility is not opposed to a modification to the equivalency factors attributable to fast food restaurants of the type operated by the intervenor Arch Enterprises, LLC. The Company's position in this regard is consistent with a conclusion reached by ORS

in its June 17, 2013, report to the Commission in Docket No. 2012-94-S, which is that a wastewater utility should have flexibility in designing rates to meet the needs of its customers. Although I believe that the modification to the Company's current rate design embodied in the application as described in the direct testimony of company witness Mr. Ed Wallace is a more reasonable approach than the alternative recommended by Mr. Warmath, I recognize that other modifications can be made by the Commission consistent with recognition of the Company's revenue requirement.

Q. WHAT COMMENTS DO YOU HAVE REGARDING MR. WARMATH'S TESTIMONY PERTAINING TO THE PROPOSED RATE DESIGN IN GENERAL?

A. I have several comments in this regard.

Mr. Warmath contends that use of the loadings provided for in the DHEC wastewater flow design guidelines set out in Appendix A to Regulation 61-67 to establish rate equivalencies results in "excessive, inequitable, and arbitrary" charges because the "charges are not reasonably related to the cost of providing service." Mr. Warmath does not object to rates based on some equivalency system, but recommends adoption of an equivalency system based upon assumptions he makes regarding water consumption and wastewater discharge for an average residential customer and the intervenors. I will address his recommended alternative equivalency system later in my testimony but wish to focus first on his principal contention that the proposed rate design is flawed.

In support of his principal contention, Mr. Warmath asserts that the proposed rate design is "based upon the application of arbitrary wastewater discharge estimates." This assertion is simply incorrect. As Mr. Warmath acknowledges in his testimony, the DHEC wastewater flow loading guidelines are used to estimate peak or maximum daily contributions for wastewater system capacity design purposes. The proposed rate design does not attempt to estimate customer wastewater discharge based on these guidelines, however. To the contrary, the proposed rate design uses the maximum capacity flow design guidelines for all classes and categories of customers as a means of distributing the Company's revenue requirement among all customers. The theory behind this allocation method is simple: because a wastewater utility is required to construct facilities sufficient to handle the peak, maximum flow demand from each customer class and category, the relative peak maximum flow capacity demands of each customer class and category under the guidelines is a reasonable means of allocating the cost of service among customers. Obviously, any class or category of customers can make the point that their actual or average flow does not reach the level of the maximum design flow under these guidelines; in fact, I would expect that there are a large number of residential customers whose average wastewater discharge never reaches the four hundred gallons of wastewater per day that the guidelines require be built by the utility to serve them. Nonetheless, the capacity is there and available to meet that demand. The ORS report to the Commission in Docket No. 2012-94-S regarding PWR's current rate design reflects that adjustments can be made to the flow associated with the equivalency factors applicable to specific types of customers and that is what PWR has proposed to do

in this case with respect to all fast-food restaurants with drive-thru facilities which it serves. As I have already noted, PWR is certainly willing to accept such further adjustments to the flow associated with the equivalency factors as the Commission may deem appropriate but should be allowed to recover its revenue requirement by way of a redistribution of the cost of service among all other customers. While I understand that the contention that the current and proposed rate design attempts to estimate wastewater discharge by a customer is necessary to support Mr. Warmath's analysis of the reasons why he believes his two clients are entitled to lower rates than proposed, it is not an accurate description of the current or proposed rate design and his analysis should therefore be rejected.

Q. WOULD YOU PLEASE COMMENT ON THE CONCEPT OF A RATE DESIGN BASED ON WATER CONSUMPTION DISCUSSED BY MR. WARMATH?

A. Yes. Mr. Warmath expresses his belief that utilizing customer metered water consumption alone as a basis for assessing wastewater user rates and charges is a superior rate design to that currently approved by the Commission for PWR. For a number of reasons, I disagree with Mr. Warmath on this point.

First, Mr. Warmath states that "[f]or the vast majority of wastewater utilities, water usage records provide the basis for assessing wastewater user rates and charges." This may well be the case for municipal or other governmentally owned or operated wastewater utilities, but it is not the case for public utilities providing sewer service in this State. In fact, according to the water utility and wastewater utility tariffed rates that are compiled and published by ORS, there are

twenty-three certificated wastewater utilities in South Carolina and only six of them are authorized by the Commission to charge for wastewater service based upon metered water consumption. Of these six, five also provide water service to their customers and therefore have immediate access to their wastewater customers' water consumption records at no additional cost. The only other public utility in South Carolina providing wastewater service which is approved to base its sewer rate on water consumption is Palmetto of Richland County LLC, or "PRC," which Mr. Warmath mentions in his testimony. He fails to mention, however, the very specific and unusual set of circumstances that led to the approval of that rate design for PRC which are described in Mr. Wallace's rebuttal testimony. In short, the most common wastewater rate designs approved by the Commission do not consist of the single volumetric rate for all customers based on water consumption that Mr. Warmath describes.

I also take issue with Mr. Warmath's contention that water usage is "the most efficient and equitable way to allocate costs to individual consumers in proportion to the actual cost of serving each customer." I note from his exhibit that his client base does not appear to include any public – again, investor owned -- utility in South Carolina providing wastewater service. Certainly, billing based strictly on water consumption may be the most efficient wastewater billing method for the governmental utilities that Mr. Warmath advises, most of which I would assume also provide water service to their sewer customers. However, it is not an efficient way for PWR to bill its customers. As noted in the rebuttal testimony of Mr. Wallace on behalf of PWR, PRC has experienced a significant number of

problems with billing its customers based on metered City water consumption and there are a number of cost and regulatory issues associated with this type of rate design that Mr. Warmath has not taken into account in this regard. That question is academic because, as noted by Mr. Wallace in his rebuttal testimony, the City has informed him that it is unwilling to provide the water billing information for PWR customers.

Similarly, I do not agree that "a uniform volumetric rate" based on water consumption is necessarily equitable to residential customers as Mr. Warmath suggests. This can be seen from considering Federal census figures and water use statistics published by the American Water Works Association, or "AWWA," an organization to which Mr. Warmath belongs and to which he refers in his testimony. I have attached as GEW Rebuttal Exhibit 1 the most recent residential water use statistics published by the AWWA which, in 2014, estimated annual residential water consumption to be 92,693 gallons, which equates to 7,620 gallons per month or 254 gallons per day. According to the AWWA in 2013, depending upon whether water saving devices have or have not been installed, daily indoor water use per capita ranges from between 45.2 gallons to 69.3 gallons. I have attached as GEW Rebuttal Exhibit 2 a copy of the household data compiled for the State of South Carolina by the United States Census Bureau which shows that the average household contains approximately 2.5 persons. Based upon these statistics, the average South Carolina household will discharge somewhere between 45% and 68%, or between 114.30 and 172.72 gallons of the potable water it consumes per day, to a wastewater system. This is a fairly wide spread in discharge levels and

confirms that even in the same customer class, there will be instances where some customers will discharge more than others. Further, while I do not suggest that all of the water consumed by a commercial customer is discharged to a sewer system, I would note that in my experience a commercial customer generally discharges a greater percentage of water to a sewer system than does a residential customer as the majority of commercial customers will likely have less of the "outdoor use" that is mentioned in the AWWA's published water use statistics. Commercial customers typically do not wash cars, irrigate gardens, fill swimming pools, bathe animals, pressure wash siding and windows, or engage in the many other outdoor activities that a homeowner will pursue requiring outdoor use of water. So, there is an inherent inequity in the rate design advocated by Mr. Warmath. Residential customers will pay the same amount for treatment of wastewater even where some of them discharge less than others. And residential customers will be likely to pay for treatment of more wastewater than they discharge to the sewer system than would a commercial customer under Mr. Warmath's proposal – even though the per unit charge based on water consumption will be the same.

Another basis for Mr. Warmath's assertion that billing based on water consumption is a better rate design is his contention that "the cost to provide wastewater collection and treatment services per gallons of wastewater generated is essentially the same for most customers." Mr. Warmath states that because "restaurants, car washes, and laundromats would not normally be included in [the] category of [an industrial pretreatment program]" customer, their pollutant strength or concentration is comparable to that of a residential customer and that "any

differences in strength or concentration of pollutants in the wastewater has an insignificant impact on treatment costs." Although this assertion may reflect the effect of a policy choice that some governmental utilities -- and even some public utilities with small commercial customer bases -- may make to impose a uniform rate on residential and commercial sewer customers, it ignores the fact that restaurants, laundromats, and car washes will have different strengths of flow from residential customers due to the discharge of grease and higher volumes of commercial grade detergents as discussed in Mr. Sadler's and Mr. Melcher's rebuttal testimonies.

Further in this regard, I noted with interest Mr. Warmath's reference to his work on behalf of a joint municipal water and sewer authority in South Carolina regarding a wholesale sewer rate contract. I am aware that the Lexington County Joint Municipal Water and Sewer Commission has entered into such a contract with the City of Cayce, South Carolina, which provides for bulk sewer charges based in part upon strength of flow. I do not know whether Mr. Warmath was referring to that contract or some other contract. Nonetheless, there are at least two governmental utilities in South Carolina which have identified pollutant strength or concentration from domestic wastewater flows as a factor in determining wastewater treatment charges. And I further note that a publication of the AWWA for which Mr. Warmath is a contributing author, *Water and Wastewater Finance and Pricing* 4th edition at pages 217-218, specifically recognizes that "in recent years some utilities have implemented assigned strength rates for commercial customers that are known to typically discharge excess strengths, but [for which] it

would be impractical to sample ... regularly." These "assigned strength rates" are higher than the "uniform rate for normal strength wastewater applicable to most or all customers" and differ from the "high strength surcharge as part of an industrial pretreatment program" mentioned by Mr. Warmath in his testimony. As discussed in Mr. Melcher's and Mr. Sadler's rebuttal testimonies, a basis exists to conclude that the strength of wastewater discharged by the intervenors is stronger than that of a residential customer. And, as Mr. Melcher notes, the concentrations of grease discharged by fast food restaurants not only increases treatment costs, but also increases system collection and transportation costs. Accordingly, Mr. Warmath's assertion that a rate design based on water consumption alone is reasonable because the cost to treat residential and commercial "is essentially the same" is at best questionable.

Q. IS IT YOUR UNDERSTANDING THAT MR. WARMATH PROPOSES AN ALTERNATIVE RATE DESIGN USING EQUIVALENCIES BASED ON ESTIMATED WASTEWATER DISCHARGE LEVELS DETERMINED BY REFERENCE TO CUSTOMER WATER CONSUMPTION?

A. Yes. As I understand it, Mr. Warmath proposes a rate design using equivalencies based upon average monthly water usage for residential customers. This average monthly water usage figure would be obtained from the City and would constitute one SFE. Commercial customer SFEs would be determined by dividing their actual monthly usage levels by this average monthly residential usage figure. Mr. Warmath suggests that all commercial customers be required to pay a minimum of one SFE regardless of their water usage and that estimates of water

usage by customer type be employed for new customers. According to Mr. Warmath, the average monthly water usage levels provided by the City would only need to be adjusted "every 3 to 4 years" because "usage levels tend to change slowly over time for different types of customers" or perhaps each time a rate adjustment application is filed with the Commission. Mr. Warmath further proposes "an appeal process" whereby commercial customers could seek an adjustment in their number of SFEs based on water billing records which demonstrate that their water usage has changed.

Q. WHAT WOULD BE THE IMPACT OF USING THIS ALTERNATIVE RATE DESIGN ON CUSTOMER'S BILLS?

A. Mr. Warmath does not state what the impact of his proposed alternative rate design would be on any commercial customers other than the intervenors. However, according to Mr. Warmath, the effect of such a rate design on the intervenors at the proposed rate of $35.50 per SFE would be to reduce their monthly bills from $3,980 under the Company's proposed rates to $373 for Arch Enterprises, LLC and from $2,219 under the Company's proposed rate to $1,672 for Corley Construction, LLC. Based upon an assumed annual revenue figure of $3,917,000 and an assumed number of SFEs at 9,150, Mr. Warmath calculates that the effect on other customers would be to require an increase in their monthly bills of approximately $0.42 per SFE over and above the proposed rate of $35.50 per SFE in order to allow PWR to recover its revenue requirement. He notes that this calculation assumes that the average monthly flow for a residential customer is the 5,550 gallons per month he estimated at page 12 of his testimony. He

acknowledges that the full effect of his proposal is unknown and that some commercial and multi-family residential customer bills may increase while other such customer bills may decrease, but attributes this to inadequate time and information to make a determination in this regard.

Q. WOULD YOU PLEASE COMMENT ON MR. WARMATH'S ALTERNATIVE RATE EQUIVALANCY PROPOSAL?

A. Yes. A number of the underlying assumptions made and figures relied upon by Mr. Warmath are inaccurate. Moreover, for a variety of reasons I think the proposal is also impractical and unworkable, is not hampered by any time limitations resulting in a lack of available data, and would not result in a just and reasonable rate vis-à-vis other customers.

Q. WOULD YOU PLEASE ELABORATE ON YOUR COMMENT?

A. Certainly. As an initial matter, I would note that Mr. Warmath's calculations assume 5,550 gallons of average monthly water consumption by a residential customer, which figure he states was "suggested above" in his earlier testimony. However, there is no basis for this assumption contained in his earlier testimony. To the contrary, the 5,550 gallon figure referred to by Mr. Warmath at pages 17-18 of this testimony is not water consumption but is the estimated average residential wastewater discharge that he described in lines 1-14 at page 12 of his testimony. Mr. Warmath appears to have confused his assumed wastewater discharge with

water consumption and, for that reason alone, his calculations regarding the impact of his alternative rate design should not be accepted.

Also, in describing the effect of his proposed alternative rate design on the monthly charges to the intervenors, Mr. Warmath mis-states the proposed monthly bill to Arch Enterprises, LLC. At the 32.975 SFEs that would be applied to that customer under the proposed rate schedule which reduces the equivalency rating per car served at drive-thrus from .10 to .025, the monthly bill for Arch Enterprises, LLC, would be only $1,170.61 and reflects a proposed reduction in monthly charges to that customer of $2,080.29 per month from its current billing. As a result of this error, Mr. Warmath also overstates the amount of reduction in annual service revenues resulting from his proposed alternative rate design and the amount of revenues that would be required to be distributed among other customers in order for PWR to achieve a revenue requirement generating service revenues of $3,917,000.

In addition to these errors, Mr. Warmath's alternative rate design proposal is impractical and unworkable for a number of reasons. As I have already noted, Mr. Wallace has been advised by the City that it is not willing to supply PWR with water consumption data. So, there is no means by which to obtain the water consumption information required – either initially or by way of the periodic consumption updates he recommends. Further, the process he describes of updating customer consumption on some periodic basis and allowing customers to appeal an SFE determination based on water consumption adds an additional and unquantified layer of regulatory expense for PWR and diverts scarce administrative

resources to potentially resolving constant complaints from the Company's customers based upon municipal water consumption records. The entire idea of having uniform rates, which is preferred under South Carolina law, would be cast aside in favor of some constantly changing rate level that can be determined only with additional expense that is unknown. This is hardly consistent with the efficiency that Mr. Warmath states is to be desired in utility rate design.

Insofar as the ability of the intervenors to timely obtain and provide to Mr. Warmath detailed billing information to allow him to determine the potential impacts of his alternative rate design upon other customers, I am not aware of any request for information being made by the intervenors for information that was not complied with by the Company or ORS. I am aware that the Commission's rules of practice and procedure do permit parties to engage in discovery. If the intervenors have not obtained information that Mr. Warmath felt was needed to permit him to fully determine and explain to the Commission the impact of his proposed alternative rate design on all customers through the discovery process or otherwise, I do not believe that this could in any way form the basis for approving his alternative rate design.

Finally, under Mr. Warmath's proposed alternative rate design, Arch Enterprises, LLC, would pay a monthly bill of only $373.00. Under the 2008 rate schedule that was in effect for Alpine Utilities, Inc. prior to the approval of new rates for PWR in Docket No. 2012-94-S, the monthly bill for the McDonald's restaurant at this same location was $372.24 per the complaint of the previous owner filed in Docket No. 2013-119-S. According to the complaint filed by Corley

Construction, LLC in Docket No. 2013-101-S, the monthly bill for the carwash and laundry operated by it under the 2008 rate schedule was approximately $182 per month prior to the approval of new rates in Docket No. 2012-94-S. The residential customer monthly bill under the Company's 2008 rate schedule and prior to the approval of new rates in Docket No. 2012-94-S was $16.75. The intervenors have not disputed that PWR has invested millions of dollars in improvements to the Alpine and Woodland systems since they were acquired in 2011 and since the last Alpine system test year. Nor have they taken issue with the assertion that since the last test year, the Company's expenses have increased by hundreds of thousands of dollars. Residential monthly rates for customers served by the Alpine system increased by approximately 73% in the Company's last rate case and are proposed to increase by another 22% in this rate case. Residential monthly rates for Woodland system customers are proposed to increase by approximately 48%. Monthly rates for Corley Construction, LLC increased by approximately 182% in the Company's last rate case and are proposed to be increased by another 22% in this rate case. The Company's proposed rate design would result in the monthly rate for Arch Enterprises, LLC to be reduced by approximately $2,000 per month. By contrast, the alternative rate design proposed by Mr. Warmath would have rates for Arch Enterprises, LLC set at only $373 per month, which would be an 88% per cent decrease in its current monthly charge and an increase of only two one hundredths of one per cent, or .002% over the amount being paid in 2008 for service at the service premises where it now operates its restaurant. Thus, this proposal not only essentially insulates Arch Enterprises, LLC from any increase in rates since 2011 -- notwithstanding the undisputed substantial increases in

investments made and expenses incurred by PWR during that three year period -- but would allow Arch to pay a rate determined to be just and reasonable by the Commission over six years ago. Mr. Warmath's proposal would therefore not result in just and reasonable rates as it by no means fairly distributes the Company's revenue requirement among all customers. Mr. Warmath criticizes PWR's proposed rates as being excessive, arbitrary, and inequitable. In fact, Mr. Warmath's alternative rate proposal would generate rates that, with respect to the intervenor Arch Enterprises, LLC, are clearly insufficient and discriminatory vis-à-vis the revenue burden he would place on other customers and are therefore patently unjust and unreasonable.

Q. WOULD YOU PLEASE SUMMARIZE YOUR REBUTTAL TESTIMONY?

A. Yes. Rate design is a matter of discretion that rests with the Commission. No basis to set rates for the intervenors using their water consumption alone exists. The strength of flow for all customers is not the same as Mr. Warmath posits and water consumption data cannot be obtained by PWR. As noted in the ORS study, it is appropriate to modify the equivalency ratings for certain classes of commercial customers and this Commission may do so if there is a factual basis to support it. PWR has presented a factual basis to do so. In my opinion, the intervenors' alternative rate design using equivalency ratings based on water consumption is fundamentally flawed due to the factual and analytical errors contained in Mr. Warmath's testimony as well as the unavailability to PWR of water consumption data. Further, the broader effect of the intervenors' proposed alternative rate design

is unknown and would clearly result in an unjust and unreasonable rate as it insulates one intervenor from the effects of rate relief to which PWR is entitled at the expense of other customers. The reduction in equivalency ratings for all commercial customers operating fast-food restaurants as proposed by PWR is factually and quantitatively supported and results in just and reasonable rates as it fairly distributes its cost of providing service among all customers based upon a measurable and objective criteria found in the DHEC guidelines. Regardless of the rate design adopted by the Commission, PWR should be allowed to recover its revenue requirement as determined by the Commission.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

Presented by American Water Works Association
Dedicated to The World's Most Important Resource™

Water Use Statistics

According to the U.S. Geological Society's 2005 Water Census **daily per capita water use in the U.S.** is 98 gallons for domestic use. This includes both indoor and outdoor use.

Average daily household water use (*including outdoor*) is 254 gallons for domestic use.

Average household water use annually (*including outdoor*) is 92,693 gallons for domestic use.

For additional information about how that water is used, please visit the USGS Q&A on typical water use at home.

By installing more efficient water fixtures and regularly checking for leaks, households can reduce ***daily indoor per capita*** water use to about 45.2 gallons per day. Here's how it breaks down for households using conservation measures:

Type of Use	Gallons per Capita	Percentage of Total Daily Use
Showers	8.8	19.5%
Clothes Washers	10.0	22.1%
Toilets	8.2	18.0%
Dishwashers	0.7	1.5%
Baths	1.2	2.7%
Leaks	4.0	8.8%
Faucets	10.8	23.9%
Other Domestic Uses	1.6	3.4%

Source: Handbook of Water Use and Conservation, Amy Vickers

If all U.S. households installed water-saving features, water use would decrease by 30 percent, saving an estimated 5.4 billion gallons per day. This would result in dollar-volume savings of $11.3 million per day or more than $4 billion per year.

Water-conserving fixtures installed in U.S. households in 1998 alone have saved 44 million gallons of water

every day, resulting in total dollar-value savings of more than $33.6 million per year.

Water Information
- Conservation at Home
- Conservation Outside
- Drought Fact Sheet
- Water Use Statistics

People Behind the Water
Your Local Water

Water Use Statistics

Daily ***indoor per capita*** water use is 69.3 gallons. Here is how it breaks down:

Use	Gallons per Capita	Percentage of Total Daily Use
Showers	11.6	16.8%
Clothes Washers	15.0	21.7%
Dishwashers	1.0	1.4%
Toilets	18.5	26.7%
Baths	1.2	1.7%
Leaks	9.5	13.7%
Faucets	10.9	15.7%
Other Domestic Uses	1.6	2.2%

Average household water use annually (*including outdoor*): 127,400 gallons

Average daily household water use (*including outdoor*): 350 gallons

Source: **Residential End Uses of Water** (Denver, Colo.: Water Research Foundation, 1999).

By installing more efficient water fixtures and regularly checking for leaks, households can reduce ***daily indoor per capita*** water use by about 35% to about 45.2 gallons per day Here's how it breaks down for households using conservation measures:

Use	Gallons per Capita	Percentage of Total Daily Use
Showers	8.8	19.5%
Clothes Washers	10.0	22.1%

Toilets	8.2	18.0%
Dishwashers	0.7	1.5%
Baths	1.2	2.7%
Leaks	4.0	8.8%
Faucets	10.8	23.9%
Other Domestic Uses	1.6	3.4%

Source: **Handbook of Water Use and Conservation**, Amy Vickers

If all U.S. households installed water-saving features, water use would decrease by 30 percent, saving an estimated 5.4 billion gallons per day. This would result in dollar-volume savings of $11.3 million per day or more than $4 billion per year.

Water-conserving fixtures installed in U.S. households in 1998 alone have saved 44 million gallons of water every day, resulting in total dollar-value savings of more than $33.6 million per year.

QT-P11

Households and Families: 2010
2010 Census Summary File 1

NOTE: For information on confidentiality protection, nonsampling error, and definitions, see http://www.census.gov/prod/cen2010/doc/sf1.pdf.

Geography: South Carolina

1 - 37 of 37

Subject	Number	Percent
HOUSEHOLD TYPE		
Total households	1,801,181	100.0
Family households [1]	1,216,415	67.5
Male householder	784,619	43.6
Female householder	431,796	24.0
Nonfamily households [2]	584,766	32.5
Male householder	271,091	15.1
Living alone	210,915	11.7
Female householder	313,675	17.4
Living alone	266,979	14.8
HOUSEHOLD SIZE		
Total households	1,801,181	100.0
1-person household	477,894	26.5
2-person household	623,419	34.6
3-person household	304,098	16.9
4-person household	231,903	12.9
5-person household	103,014	5.7
6-person household	37,833	2.1
7-or-more-person household	23,020	1.3
Average household size	2.49	(X)
Average family size	3.01	(X)
FAMILY TYPE AND PRESENCE OF RELATED AND OWN CHILDREN		
Families [3]	1,216,415	100.0
With related children under 18 years	583,361	48.0
With own children under 18 years	509,699	41.9
Under 6 years only	116,341	9.6
Under 6 and 6 to 17 years	100,306	8.2
6 to 17 years only	293,052	24.1
Husband-wife families	849,959	100.0
With related children under 18 years	350,288	41.2
With own children under 18 years	319,204	37.6
Under 6 years only	72,182	8.5
Under 6 and 6 to 17 years	66,395	7.8
6 to 17 years only	180,627	21.3
Female householder, no husband present families	281,102	100.0
With related children under 18 years	185,957	66.2
With own children under 18 years	151,472	53.9
Under 6 years only	32,942	11.7
Under 6 and 6 to 17 years	28,333	10.1
6 to 17 years only	90,197	32.1

X Not applicable.

[1] A household that has at least one member of the household related to the householder by birth, marriage, or adoption is a "Family household." Same-sex couple households are included in the family households category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. Responses of "same-sex spouse" were edited during processing to "unmarried partner."
[2] "Nonfamily households" consist of people living alone and households which do not have any members related to the householder.
[3] "Families" consist of a householder and one or more other people related to the householder by birth, marriage, or adoption. They do not include same-sex married couples even if the marriage was performed in a state issuing marriage certificates for same-sex couples. Same-sex couples are included in the families category if there is at least one additional person related to the householder by birth or adoption. Responses of "same-sex spouse" were edited during processing to "unmarried partner." Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households.

Source: U.S. Census Bureau, 2010 Census.

Summary File 1, Tables P17, P18, P28, P29, P37, P38, and P39.

Source: U.S. Census Bureau | American FactFinder